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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/528,503 | 03/27/2005 | Mohamed Yahia Benslimand | 6495-0096WOUS | 5038 |

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| EXAMINER |
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DOUGHERTY, THOMAS M

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| ART UNIT | PAPER NUMBER |
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2834

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 01/25/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/528,503

Applicant(s)

BENSLIMAND ET AL.

Examiner

Thomas M. Dougherty

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 16-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 10, 16, 17 and 20-22 is/are rejected.
- 7) ☒ Claim(s) 6, 8, 9, 11-13, 18 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 305, 1206.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. There is no proper antecedent basis for citation of "element of the first type" or "the element of the second type" in the claim. Note that by changing the dependency of claim 7 to claim 6 instead of claim 2, this rejection would be overcome. Claim 7 as it stands now is so indefinite that it cannot yet be considered against the prior art.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 10, 16, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Dohno et al. (US 2003/0125781). Dohno et al. show (figs. 11-13) an actuator comprising: a tubular portion (10D) extending in a longitudinal direction, the tubular portion (10D) comprising a body of an elastomeric material (50D) arranged between two electrodes (60C), wherein any line of symmetry extending between two opposite points

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on a periphery in a cross-section perpendicular to the longitudinal direction has a length which is different from any other such line of symmetry.

The tubular portion (10D) is formed by rolling up a sheet comprising at least two elements (51C) each comprising a body of an elastomeric material and an electrode (60C) attached to a first surface thereof, wherein deformation of the body is restricted in a first direction and supported in a another, second, direction. See paragraph 3 where it is noted that "The elastic actuator has a length and elastically deforms in the lengthwise direction ...".

The second direction is parallel to the longitudinal direction.

The first direction is substantially perpendicular to the second direction.

The tubular portion is formed by rolling of the sheet (50D) around a core (10D) of an elastomeric material.

Dohno et al. show (figs. 11-13) actuator comprising: an elastomeric material (51C) arranged between two electrodes (60C) forming a tubular portion (50D) extending in a longitudinal direction and having a cross-section, wherein the cross-section of the tubular portion is asymmetrical.

The tubular portion (50D) is formed by multiple layers of elastomeric material (51C) And electrode (60C).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dohno et al. (US 2003/0125781) in view of Topliss et al. (US 2005/0040736).

Given the invention of Dohno et al. as noted above, they do not show any corrugations extending in the first direction. They do not show at least one corrugated surface that is molded or electrodes deposited on the corrugated surface which correspond to the corrugations of the corrugated surface of the elastomeric material.

Topliss et al. show in all their figures an electroactive body which has is corrugated.

At least one surface is corrugated.

They don't note how the device is made. The device is piezoelectric, which description includes electroactive elastomers.

It would have been obvious to one having ordinary skill in the art to employ the corrugations of Topliss et al. in the device of Dohno et al. at the time of that invention since this allows for significant bending when the device is actuated. See paragraphs 8+ for example.

Recitation of how the device is made does not carry patentable weight at this time since it does not implicitly describe an additional structural feature of the invention. Additionally the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

Allowable Subject Matter

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Claims 6, 8, 9, 11-13, 18 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not show nor fairly suggest the claimed actuator including a sheet comprising an element of a first type comprising a conductive terminal of a first type being in electrical contact with the electrode of the element, an element of a second type comprising a conductive terminal of a second type being in electrical contact with the electrode of the element, wherein the conductive terminal of the first type is electrically isolated from the conductive terminal of the second type when the elements are stacked. Furthermore, not shown nor suggested by the prior is a type of element as that claimed wherein the tubular portion is filled with a core of elastomeric material. Furthermore not shown nor suggested by the prior art is a type of element as that claimed which is a bimorph type of element of two different types of elements.


Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Additional prior art cited reads on at least some aspects of the claimed invention.

Direct inquiry to Examiner Dougherty at (571) 272-2022.

tmd
tmd

January 18, 2007


TOM DOUGHERTY
PRIMARY EXAMINER